

Chapter 19.72

SENSITIVE LANDS

Sections

- 19.72.010 Purpose.**
19.72.020 Scope and application.
19.72.030 Procedure.
19.72.040 Development requirements.
19.72.050 Development standards.

19.72.010 Purpose.

The city deems it important to the peace, health, safety, and welfare of the city's inhabitants that sensitive land areas within the city be protected through their inclusion in a sensitive lands overlay zone to insure that urban development be guided in a manner that will minimize the potential for flooding, erosion, and other natural hazards and will protect their natural scenic beauty. The objectives to be achieved by designation of a Sensitive Lands Overlay Zone include, without limitation, the following:

1. The protection of the public from natural hazards of storm water runoff and erosion by requiring drainage facilities and the minimal removal of natural vegetation.

2. The minimization of the threat and consequential damages of fire in hillside areas by establishing fire protection measures.

3. The preservation of geological features, wildlife habitat, and open space.

4. The preservation of public access to mountain areas and natural drainage channels.

5. The retention of natural topographic features such as drainage channels, streams, ridge lines, rock outcroppings, vistas, trees and other natural plant formations.

6. The preservation and enhancement of visual and environmental

quality by use of natural vegetation and the prohibition of anything excessive and of any terracing.

7. The assurance of an adequate transportation system for the total hillside area to include consideration of the city's master street plan from time to time. This system design will consider densities and topography with minimal cuts, fills, or other visible scars.

8. The establishment of on-site and off-site traffic facilities that are designed for accessibility of fire protection, snow removal, school buses, and emergency vehicles.

9. The encouragement of a variety of development designs and concepts that are compatible with the natural terrain of the sensitive areas and will preserve open space and natural landscapes.

10. Placement of building sites in such a manner as to permit ample room for adequate landscaping, surface drainage, parking between and around the buildings, and sewer serviceability.

11. The encouragement of a regard for the view of the hillsides as well as a view from the hillsides.

19.72.020 Scope and application.

A. Application.

The provisions of this chapter shall apply to all lands in the city which lie within any area designated as a Sensitive Lands Overlay Zone on the city's zoning map. The regulations of this chapter may apply to an area outside of a designated Sensitive Lands Overlay Zone if the director determines that the environmental conditions of the subject area qualify it as a sensitive area, and the city's zoning map shall thereafter be amended to include such area in the Sensitive Lands Overlay Zone.

All approved subdivision plats that lie wholly or partially within the Sensitive

Lands Overlay Zone shall be recorded with such designation shown on the affected lots.

B. Supplemental and Conflicting Provisions.

Unless otherwise specifically provided, the overlay development standards in this chapter are in addition to the standards applicable to the underlying districts provided elsewhere in this title. In the event of conflict between the standards, guidelines and criteria of this chapter and the requirements of the underlying zoning district, the city's subdivision ordinance or any other requirements of this code, the more restrictive provision shall apply.

C. Preliminary Activities

The following requirements shall govern any preliminary surveying, testing, or design-related activities conducted within the Sensitive Lands Overlay Zone for the purpose of exploring, evaluating and/or establishing locations for any permanent improvements.

(a) Proposals for surveying, testing or other design-related activities requiring physical entry into areas located within the Sensitive Lands Overlay Zone shall be submitted to the planning commission for review and approval. The areas of proposed disturbance shall be staked at the applicant's expense. Following staking, the city engineer shall have a reasonable opportunity to observe the staking prior to granting a permit.

(b) Thereafter the planning commission and the city engineer may authorize issuance of a grading permit to allow access to, and permit testing of, the areas in which the permanent improvements are proposed to be located. The permit shall be limited to the staked area of proposed disturbance and may include conditions deemed appropriate by

the city engineer to protect sensitive areas. Such conditions may include requirements for the following:

1. Photo documentation in order to identify pre-existing types and general locations of vegetation materials which may need to be replaced

2. Implementation of adequate erosion control measures approved by the city engineer to protect affected areas. Supplemental erosion control measures may also be required between initial disturbances and either construction of permanent improvements or restoration and revegetation of the disturbed area.

3. Limitations on cuts and fills to ensure that such cuts and fills are made only where necessary to obtain access for required testing.

4. Requirements for restoration and revegetation of disturbed areas where permanent improvements are not constructed within a reasonable time following the disturbance.

(a) Following the completion of any preliminary surveying, testing, or design-related activities in accordance with this subsection, any permanent improvements subsequently developed or installed in the Sensitive Lands Overlay Zone shall conform to the provisions of this chapter.

19.72.030 Procedure.

Proposals for development in the Sensitive Lands Overlay Zone shall follow the procedure set forth in this section and shall be reviewed and approved by the planning commission a building permit is issued.

A. Conceptual Approval.

Development within the Sensitive Lands Overlay Zone shall first require the submittal and approval of a development proposal which includes the following information:

(a) A development map, drawn at a scale of 1"=100' or larger, which shows:

- (1) One or two foot contours;
- (2) Natural slopes of 30% or greater color shaded;
- (3) Proposed development layout of lots, roads, schools, churches, parks, open space, fire stations, commercial, cut or fill slopes or areas of disturbance, and any other proposed land use;
- (4) Any roads with grades in excess of eight percent; and
- (5) Native vegetation, by type and location.

(b) A report which indicates:

- (1) Total development area;
- (2) Number of lots or units;
- (3) Proposed density;
- (4) Percentage of each use, such as residential, commercial, recreational, transportation, etc.; and
- (5) Statement of justification for the project design.

B. Preliminary Approval.

Following conceptual approval, preliminary approval shall be obtained. The information and reports required in this subsection shall be submitted as part of an application for preliminary approval and may be in addition to information required for preliminary approval for a subdivision.

(a) All prepared reports shall be prepared by persons licensed to practice their specialty or expertise in the state.

(b) In reviewing technical reports, calculations, and plans which may be required, the city engineer may find it necessary to obtain the advice of other experts regarding the adequacy of the reports submitted and the validity of the conclusions and recommendations reached in the reports. In such cases, the city engineer may consult with such experts, with the reasonable costs of these consultations to be borne by the

developer. Payment by the developer of the costs of such consultations shall be a condition of preliminary or final plat approval.

(c) A development model, at a scale determined appropriate by the director, which shows:

- (1) Two foot contour intervals or as determined appropriate by the director;
- (2) Natural slopes of 30% or greater color shaded;
- (3) The proposed layout of lots, roads, open space, cut or fill slopes or areas of disturbance, and existing native vegetation by type and location.

C. Soils Investigation

A soils investigation report which contains the following information:

(a) Nature, distribution and classification (Unified Soil Classification) of existing soils to the appropriate depth of influence by the proposed development, but not less than ten feet deeper than the proposed excavations or to bedrock, whichever is less;

(b) Strength of existing soils, bearing capacity of supporting soils, settlement estimates, lateral pressures and trench excavation limitations;

(c) Ground water levels that may affect development and estimated elevation of high ground water levels;

(d) Appropriate laboratory testing for classification, consistency, strength and consolidation conditions;

(e) Slope stability;

(f) Potential frost action based on material type and groundwater level;

(g) Frost depth;

(h) Geologic and hydrologic hazards unless described in subsections (5) and (6) below, entitled "Geotechnical and Geological Report" and "Grading and Drainage Report";

(i) A verified written statement by the persons or firm preparing the soils

report describing the general suitability of the site for the developer's intended use. The report shall identify soil constraints to development and shall state the professional opinion of the author as to the ability of the proposed development plan to mitigate and/or eliminate said constraints in a manner as to prevent hazard to life, hazard to property, adverse affects on the safety use or stability of public way or drainage channel, and adverse impact on the natural environment. If the soil report prepared for a subdivision shows the presence of critically expansive soils, high water table, organic soils, liquefiable soils, collapsible soils, or other soil problems which, if not corrected, would lead to structural defects of the proposed building, damage to the building from the water or premature deterioration of the public improvements, a soil investigation of each lot in the subdivision may be required by the city

D. Vegetation Report.

A vegetation report which shows:

- (a) Location and identification of existing vegetation;
- (b) Vegetation to be removed and the method of disposal;
- (c) Vegetation to be planted to replace the amount and type being removed;
- (d) Slope stabilization measures to be installed;
- (e) Analysis of the environmental effects of such operations including effects on slope stability, soil erosion, water quality, wildlife, and fire hazard; and
- (f) Topsoil stockpile area for restoration of topsoil following completion of construction.

E. Geotechnical and Geological Report.

A geotechnical and geological report shall be required whenever a proposed development:

- (a) Lies within 1,000 feet of an identified fault;
- (b) Is located above the level of the ancient Lake Bonneville;
- (c) Is located at an elevation of five thousand two hundred (5,200) feet or greater;
- (d) Is located on slopes greater than 25% percent; or
- (e) Is determined to have potential hazards by the city engineer, Salt Lake County geologist, or state geologist.

The geotechnical and geological report shall include:

- (a) A geologic map showing topography, surface, and subsurface geologic features and any geologic limitations to the proposed use
- (b) Depth of bedrock
- (c) Geologic hazards
- (d) Ability to mitigate or eliminate geologic problems
- (e) Subsurface investigation logs and reports

F. Grading and Drainage Report.

A grading and drainage report which includes storm water management, erosion, and grading plans describing the methods by which surface water, natural drainages, flooding, erosion and sedimentation loss, and hydrologic hazards will be controlled during and after construction. The plan shall include the following information:

- (a) The grading plan shall show present topography to include elevations, lines and grades including the location and depth of all proposed fills and cuts of the finished earth surfaces using contour interval of one or two feet;
- (b) The proposed area to be graded shall be clearly delineated on the plan;

(c) All calculations and proposed details used for design and construction of debris basins, impoundments, diversions, dikes, waterways, drains, culverts, and other water management or soil erosion control measures shall be shown. Drainage calculations shall determine runoff volume and peak discharge using the "Rational Method, SCS, or Curve Number Method," or appropriate equivalent. Data provided should include:

(1) Rainfall depth, duration and distribution;

(2) Watershed slope and drainage area delineation;

(3) Land condition of watershed surface;

(4) Topography of drainage area; and

(5) Description of soil conditions of watershed. Erosion calculations shall employ predictions of soil loss sheet erosion using the Universal Soil Loss Equation or appropriate equivalent. Data to be provided should include factors of:

(a) Rainfall intensity and duration;

(b) Soil erodibility;

(c) Land slope and length of slope or topography;

(d) Conditions of the soil surface and land management practices in use; and

(e) Surface cover, grass, woodland, crops, pavements, etc.

G. Final Approval.

Final approval shall require satisfactory compliance with all of the requirements of the preliminary review, and compliance with all city requirements for final plat approval.

19.72.040 Development requirements.

A. Development in General.

Slope areas in excess of 30% may not be developed, and no more than 30% of a development's slope areas in excess of

30% may be included in the area calculation to determine density. The planning commission may modify this requirement upon finding that:

(a) No significant harm will result;

(b) The proposed modification will result in a more functional and improved plan; and

(c) The developer/builder agrees to comply with any conditions or requirements imposed by the planning commission to mitigate any adverse effects which may result from the proposed modification.

B. Subdivision, Single Family Lots.

The minimum lot size and yard requirements of the underlying zone shall apply, with the following exceptions:

(a) Every lot shall have at least 3,500 square feet of "buildable area". A lot's "buildable area" is the area of the lot where the slope is 30% or less, which is completely contiguous and which has a minimum dimension of 50 feet.

(b) Lots shall allow dwelling units to be located within 250 feet from a public street. All main and accessory buildings shall be built entirely within the buildable area.

C. Density Limitations

The density limitations of the underlying zones shall apply except that all buildings be built within the buildable area.

D. Maximum Impervious Surface

The total maximum allowable coverage by impervious material within a project or portion of a project within the Sensitive Lands Overlay Zone shall not exceed 35% of the total project area. Areas of roofs and driveways will be estimated and included in the total impervious surface area.

19.72.050 Development standards.

A. Scope.

The development standards and provisions of this section shall be required in connection with all structures and construction in the Sensitive Lands Overlay Zone.

B. Grading, Drainage, and Erosion.

The area of the watershed shall be used to determine the amount of storm water runoff generated before and after construction.

(a) A grading and drainage report shall be prepared in which the developer shall describe the methods intended to be employed to control the erosion increase while in construction.

(b) The developer is responsible for interim stabilization of all disturbed areas during periods of construction to prevent erosion offsite effects, and for final stabilization once construction is completed.

(c) The "SCS, Curve Number Method, or Rational Method," or other storm water computation method as approved by the city engineer, shall be used in computing runoff.

(d) Lots shall be arranged so as to ensure adequate setbacks from drainage channels. The 100-year storm event shall be that basis for calculating setbacks. No structures shall be allowed in the 100-year flood plain.

(e) Existing drainage channels shall remain as historically located except that roads and utilities may be installed across such channels as approved by the city engineer. Where these channel modifications are planned, the developer shall obtain applicable state Division of Water Rights and U.S. Army Corps of Engineers permits. The developer shall provide evidence of such permits to the city.

(f) Facilities for the collection of storm water runoff shall be constructed

on the development sites and according to the following requirements:

(1) Such facilities shall be the first improvements or facilities constructed on the development site.

(2) Such facilities shall be designed so as to detain safely and adequately the maximum expected storm water runoff for a 100-year storm event while allowing an offsite discharge not to exceed one tenth (0.1) cubic foot per second per acre.

(3) Such facilities shall be so designed so as to divert surface water away from cut faces or sloping surfaces of a fill.

(4) The existing drainage system will be utilized to the extent possible in its unimproved state.

(5) Where drainage channels are required, wide shallow swales lined with appropriate vegetation, rock, or other approved material shall be used instead of cutting narrow, deep drainage ditches. Flow retarding devices, such as detention ponds, check dams, and recharge berms, shall be used where practical to minimize increases in runoff volume and peak flow rate due to development.

(g) Construction on a development site shall be of a nature that will minimize the disturbance of vegetation cover.

(h) Erosion control measures on a development site shall minimize increased suspended solids loading in runoff from such areas. A drainage design system to control storm water erosion during and after construction shall be contained in a detailed grading and drainage report submitted by the developer.

(1) No grading or stripping shall be permitted except as part of a development plan approved in advance by the planning commission.

(2) A description of any hydrologic hazards associated with the proposed

development site and adjacent area shall be required. Hydrologic hazards may include high water table, surface water impoundments, gradient of the property, flood plains, etc.

C. Cut and Fill Slopes.

Cut and fill slopes shall comply with the following unless otherwise recommended in an approved soils and geology report:

(a) Cut and fill slopes shall not exceed 12 feet.

(b) Cut and fill slopes shall not exceed a slope ratio of 2:1 except as follows:

(1) No slopes shall be cut steeper than the bedding plane, fracture, fault or joint in any formation where the cut slope will lie on the dip of the strike line of the fracture, bedding plane, fault or joint.

(2) No slopes shall be cut in an existing landslide, mud flow or other form of naturally unstable slope.

(3) If the material of a slope is of such composition and character as to be unstable under the anticipated maximum moisture conditions, the slope angle shall be reduced to a stable value or increased through retention using a method approved by the city engineer and certified as to its stability by a professional soils engineer.

(c) Fill slopes shall not be constructed on natural slopes steeper than 2:1.

(d) Roadway cut and fill slopes located outside the dedicated public right-of-way shall be within recorded easements providing for slope protection and preservation. The easements shall be in a form acceptable to the city.

D. Earthwork.

(a) All surface areas to receive fill shall be stripped of any surface vegetation, topsoil, and organics and

cleared of any trash and debris that may be present at the time of construction.

(b) After the site has been cleared and stripped, the exposed subgrade soils in those areas to receive fill shall be scarified to a depth of eight inches.

(c) All fill material shall be earth materials that are free from organic material, (less than 30% by volume) and other deleterious materials as well as free of metal, concrete, asphalt and other construction debris. Imported fill material should be a non-expansive (less than 2% swell) granular materials and should not contain rocks or lumps over 6-inches in greatest dimension and not more than 15% of the material larger than 2 ½-inches.

(d) Surface areas disturbed by trench excavations, shall be contained within approved rights-of-way, except as may be necessary in order to comply with Occupational Safety and Health requirements as the city engineer may approve. Trench boxes shall be used whenever required to insure compliance with this requirement.

(e) The following compaction criteria shall be met for filling operations based on ASTM test designation 698-78:

Description Compaction Effort	
Subgrade	95%
Structural Fill	98%
Trench Backfill	95%
Trench Backfill (top 12-inches beneath pavement and concrete)	98%
Basement wall backfill	90%

Fill material shall be spread and compacted in uniform horizontal lifts not exceeding eight inches in uncompacted thickness. Before compaction begins, the

fill shall be brought to within 2% +/- of the optimum moisture content. Each lift should be thoroughly mixed before compaction to ensure a uniform distribution of moisture.

(f) All structures shall bear on well compacted fill material or firm, undisturbed natural soil. No organics, mud, muck, frozen material or ponded water shall be allowed in the footing foundation.

(g) A written summary report of the completed compaction, showing location and depth of tests, materials used, moisture-density curves, moisture contents and relative density (if appropriate), prepared by a civil engineer, geotechnical engineer, or soils engineer shall be submitted to the city engineer for review.

(h) The city engineer may require additional tests or information, if, in his opinion, the conditions or materials are such that additional information is necessary.

E. Setbacks.

The setbacks and other restrictions specified by this subsection are a minimum and may be increased by the city if necessary for safety and stability, to prevent damage of adjacent properties from deposition or erosion, or to provide access for slope maintenance and drainage. Setbacks dealing with distances from property lines, structures or faults, and must satisfy requirements of the following paragraphs. Retaining walls may be used to reduce the required setbacks when approved by the city.

(a) Setbacks from property lines shall comply with this title and the city's building code.

(b) Setbacks between graded slopes (cut or fill) and structures shall comply with the city's building code and other applicable ordinances.

(c) No structure shall be located over a fault. Determinations of the appropriate setback distance from the fault shall be made using data obtained in the geological report by the person or firm who prepared the geological report, but in no case shall this distance be less than ten feet.

F. Vegetation and Revegetation

(a) All areas on development sites cleared of natural vegetation in the course of construction of offsite improvements shall be replanted with revegetation which has good erosion control characteristics.

(b) The use of persons or firms having expertise in the practice of revegetation (i.e., licensed landscape architects or nurserymen) shall supervise the planning and installation of revegetation cover.

(c) Vegetation shall be removed only when absolutely necessary, e.g., for the construction of buildings, roads and filled areas.

(d) No vegetation shall be removed on a continuous hillside, crest (upslope or downslope) or a slope 30% or greater unless otherwise determined by the planning commission upon recommendation.

(e) Approval from the city engineer for uses such as trails and open space improvements. Any revegetation of such a hillside shall be subject to the approval of the city engineer.

(f) Topsoil removed during construction shall be conserved for later use on areas requiring vegetation or landscaping (i.e., cut and fill slopes).

(g) All disturbed soil surfaces shall be stabilized or covered prior to November 1st. If the planned impervious surfaces (i.e., road, driveways, etc.) cannot be established prior to November 1st, a temporary treatment adequate to

prevent erosion shall be installed on those surfaces.

(h) The property owner and/or developer shall be fully responsible for any destruction of native or applied vegetation identified as necessary for retention and shall be responsible for such destroyed vegetation. They shall carry the responsibility both for employees and subcontractors from the first day of construction until the final acceptance of improvements. The property owner and developer shall replace all destroyed vegetation with varieties of vegetation approved by the planning commission. The property owner shall assume co-responsibility with the developer upon purchase of the lot.

G. Geology.

(a) No structure shall be built on or with 20 feet of any identified faults.

(b) No structures or off-site improvements shall be allowed on any active landslide area.

(c) Problems associated with development on or near perched ground water and shallow ground water must be mitigated in a manner as approved by the planning commission.

(d) No structures shall be allowed in any rockfall zone. Off-site improvements may be allowed through special approval by the planning commission.

H. Fire Protection.

(a) Footing and foundation permits shall not be issued until work on the water system has commenced. A full building permit shall be issued only when the water system is completed and operational to provide fire protection.

(b) Each development site proposal and building permit application shall be reviewed by the fire department to assure compliance with the city's fire code. Non-compliant developments shall be disapproved.

(c) Spark arresters shall be installed in every fireplace constructed indoor or outdoor. Screen openings in such arresters shall not be in excess of 1/4 inch diameter.

(d) Development adjacent to public lands shall provide access for fire protection vehicles and equipment.

(e) Restrictive covenants for a development in the Sensitive Lands Overlay Zone shall not require the use of wood shake shingles or wood exterior siding, regardless of whether or not such materials have been treated with fire retardant.

I. Streets and Ways

Streets, roadways, and private access ways shall follow as nearly as possible the natural terrain. The following additional standards shall apply:

(a) At least one ingress and one egress route shall be provided for each subdivision or PUD project, unless there is a crash gate or the extension of a future stub street that will provide additional access.

(b) Points of access shall be provided to all developed and undeveloped areas for emergency and fire fighting equipment. Driveways located upon each lot extending from a public or private street shall have sufficient width and design to admit and accommodate fire fighting equipment (complying with all city engineering standards).

(c) Cul-de-sacs shall not exceed 600 feet in length and shall have a turnaround with a back of curb line radius of at least 55 feet. Stub-streets that are longer than the width or length of any adjacent single lot or 200 feet, whichever is less, shall have a temporary turnaround at the end thereof.

(d) Centerline curvatures shall not be less than a 100 foot radius on any curved street pattern.

(e) Variations of the street design standards developed to solve special hillside visual and functional problems may be presented to the planning commission for consideration and approval. Examples of such variations may be the use of split roadways to avoid deep cuts, one-way streets, modifications of surface drainage treatments, sidewalk design, or the extension of a cul-de-sac.

(f) Development sites which are located near canyon trails will provide access to those trails. Parking areas may be required by the planning commission at trail heads.

(g) Developments adjacent to public lands shall provide for access by fire protection equipment.

(h) The maximum amount of impervious surface for streets and roadways shall be 20% of the entire development site.

(i) All streets or rights-of-way for vehicular traffic shall be subject to the following limitations:

(1) The maximum grade of such streets or rights-of-way shall be 12% except as hereafter provided.

(2) The provisions of this subsection shall not apply to streets or rights-of-way already constructed or which have heretofore been granted preliminary approval by the planning commission.

(3) Roads shall be designed to meet the city road base, asphalt and compaction standards.

J. Trails Upon Hillsides

(a) Trail means a system of public recreational pathways located within the city for use by the public.

(b) The sub-divider shall dedicate and improve to city standards trails necessary to provide public access to public lands and other trails shown on city or county master plans or required by the planning commission. Trails shall be located so

that the route is feasible for both construction and long-term maintenance; sideslopes shall not exceed 70% and rock cliffs and other insurmountable physical obstructions shall be avoided. The specific location of the trail right-of-way shall be verified on the ground before approving the subdivision. The amount of land required for trail dedication without compensation shall not exceed five percent of the land within the subdivision excluding trails located within a standard street right-of-way.

(c) A trail may be constructed to access upper/lower portions of residential property subject to the following conditions:

(1) That no cut or fill of the hillside be in excess of two feet. All cuts or fills shall be properly retained.

(2) That the trail follows a meandering course, and not use a direct line pathway to the desired location. Where possible, the trail should follow the natural contours of the hillside.

(3) That the trail be heavily landscaped with native materials.

(4) That prior to construction and/or hillside cuts, the trail plan be submitted to the director and city engineer for review and approval.

(5) The property owner may appeal any conditions placed upon the approval, or the denial of the request to the planning commission.

K. Architectural Design.

(a) The design of buildings proposed for construction in the Sensitive Lands Overlay Zone is encouraged to be visually compatible with the natural beauty of the foothills and canyon areas and other surrounding sensitive lands..

(b) The use of materials for buildings and fences shall blend harmoniously with the natural setting.

(c) The planning commission may review the design and comment on the specified exterior materials and colors for all structures other than single family dwellings.

(d) Exposed foundation walls shall not exceed four feet above finished grade at any point.

L. On-Site Development

The property owner and developer shall be fully responsible for making all improvements in accordance with the development site approval, e.g., drainage, erosion and vegetation requirements.

M. Bond

In addition to the provisions requiring the posting of a bond, the developer or property owner shall be required to guarantee the completion of revegetation projects, the stabilization of grading sites, cuts and fills and construction of storm water runoff facilities, and the construction of recreation space as required in the code. Such bond shall be in an amount equal to 110% of the cost of construction of such work and shall continue for 18 months after the completion date of such projects, improvements or facilities.